

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/294,137	MAEDA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Brian P. Werner	2621	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment received on December 13, 2004.
2. ☒ The allowed claim(s) is/are 1,2,4-7,12-15 and 17-36.
3. ☒ The drawings filed on 11 March 2002 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

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|--|--|
| <ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____</li> <li>7. <input type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____</li> </ol> |
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## **ALLOWANCE**

### ***Response to Amendment***

1. Applicants claim amendment received on December 13, 2004 has been entered.

### ***Allowable Subject Matter***

2. Claims 1, 2, 4-7, 12-15 and 17-36 are allowed. These claims will be consecutively renumbered as 1-30.

3. The following is an examiner's statement of reasons for allowance:

The claimed invention distinguishes over the prior art by comparing first and second aligned and brightness adjusted images, both picked up from the same substrate, by using a scatter diagram of the brightness of the first and second images.

A scatter diagram (claimed as a "scattered diagram", but having the same meaning) is described by the applicant as showing "the brightness values of the two images on the ordinate and abscissa" (specification page 42, line 12, and figures 30-37). This is consistent with the plain meaning of the term, which is "a two-dimensional graph of two or more variables with them plotted on the Y axis or the X axis to show their relationship(s); also called scattergram, scatter diagram" (Source: Webster's New Millennium™ Dictionary of English, Preview Edition (v 0.9.5) Copyright © 2003, 2004 Lexico Publishing Group, LLC).

Thus use of a scatter diagram in the claimed combinations facilitates easy determination of an appropriate threshold of comparison suitable for the images and reduces false reports of

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defects (“Thus, whether the input threshold is appropriate or not can be decided easily by observing this scatter diagram. Also, with reference to the displayed scatter diagram, it is possible to determine a threshold suitable for the images” at specification page 43, top paragraph; “These scatter diagrams, with the thresholds generated by image data within a local region, effectively reduce false reports of detected images. Such an important feature/limitation of the present invention is not taught or suggested by the applied prior art” at applicant response received on December 13, 2004, page 14, bottom paragraph).

The prior art Emery (US 6,282,309 B1) teaches the use of a scatter diagram for inspecting a substrate (figures 19 and 20; where both reflected and transmitted images of a substrate are measured and plotted against each other). While this reference teaches the concept of using a scatter diagram to detect defects, it does not produce a scatter plot from first and second aligned and brightness adjusted images, both picked up from the same substrate as required by the claim. Furthermore, the Emery reference is concern with knowing the “physical location of a defect” (Emery, column 21, line 25). Rather, Emery is concern with determining the presence of a defect, and then classifying the defect (“identify the presence of a defect” at column 21, line 37; “identify the defect types” at column 21, line 48). Thus, there is no suggestion and there would be no benefit to modifying the Lee et al. reference (US 5,808,735 A – art of record, and relied upon as the primary reference in the previous combinations) to incorporate this teaching. This is because Lee discloses a system that aligns and compares first and second images taken from the same substrate (i.e., a test and reference image of a semiconductor) to detect defects and their locations which is fundamentally different from Emery reference. Emery simply plots a scatter diagram of transmitted vs. reflected light through

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the substrate and uses the result to determine the presence and type of defect. This, a combination of Lee and Emery to achieved the currently pending claim combinations would be based merely on improper hindsight. Thus, the aforementioned claims are allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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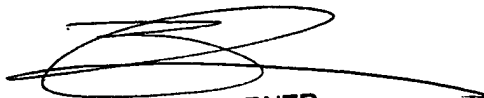
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian P. Werner whose telephone number is 571-272-7401. The examiner can normally be reached on M-F, 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh M. Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian Werner  
Primary Examiner  
Art Unit 2621  
April 27, 2005

  
BRIAN WERNER  
PRIMARY EXAMINER